

Applicant : Matthew Seelig et al.

Date: 6/14/06

Serial No.: 10/813,914

Art Unit: 3733

Response to Office Action of February 7, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1(original). An instrument for gripping an orthopaedic fixation pin during a surgical procedure and extracting the pin from bone in which the pin is embedded, the pin having an embedded portion extending into the bone along a longitudinal axis, and a projecting portion projecting longitudinally from the bone adjacent a bearing surface associated with the bone, the instrument comprising:

a first handle member;

a second handle member coupled with the first handle member for selective movement relative to the first handle member between a first position and a second position;

a pusher coupled with the first and second handle members for movement relative to the first and second handle members in directions along a linear path essentially parallel to the longitudinal axis in response to movement of the second handle member between the first and second positions; and

a gripping mechanism including first and second gripping elements coupled with the first and second handle members for movement to grip the projecting portion of the pin between the first gripping element and the second gripping element in response to an

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Serial No. : 10/813,914

Art Unit: 3733

Response to Office Action of February 7, 2006

initial movement of the second handle member from the first position toward a second position;

the second handle member being coupled to the pusher such that upon movement of the second handle member relative to the first handle member farther toward the second position, subsequent to the initial movement, the pusher is urged against the bearing surface to move the gripping mechanism away from the bearing surface and to establish an extraction force in a direction essentially parallel to the longitudinal axis, and the gripped projecting portion of the pin is moved with the gripping mechanism to withdraw the embedded portion of the pin from the bone along a direction essentially parallel to the longitudinal axis.

2(original). The instrument of claim 1 wherein the pusher comprises a plunger mounted upon the first handle member for sliding movement in directions essentially parallel to the longitudinal direction.

3(original). The instrument of claim 1 wherein the second handle member is mounted for pivotal movement relative to the first handle member.

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4(original). The instrument of claim 1 wherein:
the first gripping element includes a gripping surface integral
with the first handle member;
the second gripping element includes a gripping finger mounted
upon the first handle member for movement toward and away from the
gripping surface; and
a linkage system couples the second handle member with the
gripping finger for movement of the gripping finger laterally toward
the gripping surface in response to movement of the second handle
member from the first position toward the second position.

5(original). The instrument of claim 4 wherein the pusher
comprises a plunger mounted upon the first handle member for sliding
movement in directions essentially parallel to the longitudinal
direction.

6(currently amended). The instrument of claim 5 wherein the
~~projecting portion of the pin includes an external contour~~
~~configuration, the gripping surface includes a first contour~~
~~configuration complementary to a first portion of the external~~
~~contour configuration of the projecting portion of the pin, and the~~
~~plunger has a second contour configuration complementary to a second~~
~~portion of the external contour configuration of the projecting~~
~~portion of the pin, whereby the external contour configuration of the~~

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Serial No. : 10/813,914

Art Unit: 3733

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pin essentially is confined , the first and second contour configurations being dimensioned and configured for essentially confining the pin closely between the gripping surface and the plunger.

7 (currently amended) . The instrument of claim 6 wherein the external contour configuration of the projecting portion of the pin comprises a cylindrical contour configuration, and the complementary first and second contour configurations of the gripping surface and the plunger each comprise a partially cylindrical contour configuration.

8 (original) . The instrument of claim 5 wherein the plunger is mounted for movement between a retracted position, wherein the plunger is retracted toward the first handle member, and an advanced position, wherein the plunger is advanced from the first handle member against the bearing surface, the instrument including:

 a biasing mechanism for biasing the plunger toward the retracted position with a predetermined biasing force; and

 an actuator carried by the second handle member for urging the plunger toward the advanced position, against the predetermined biasing force of the biasing mechanism, in response to movement of the second handle member from the first position toward the second position.

Applicant : Matthew Seelig et al. Date: 6/14/06
Serial No. : 10/813,914 Art Unit: 3733
Response to Office Action of February 7, 2006

9(original). The instrument of claim 8 wherein the linkage system is configured for urging the gripping finger toward the gripping surface to establish a gripping force, in response the initial movement of the second handle member toward the first handle member, and for urging the plunger toward the advanced position to establish an extraction force in response to movement of the second handle member beyond the initial movement toward the second position, with the gripping force established prior to establishment of the extraction force, by virtue of the predetermined biasing force.

10(original). The instrument of claim 9 wherein the actuator includes an arm on the second handle member, the arm being coupled with the biasing mechanism such that the biasing mechanism biases the second handle member toward the first position.

11(original). The instrument of claim 10 wherein the biasing member includes a spring positioned and configured for biasing the plunger toward the retracted position and the second handle member toward the first position.

12(withdrawn).

13(withdrawn).

14(withdrawn).